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ABSTRACT

New Hampshire Supervisory School Union 58 is the site of an experimental schools project, and the career education program developed in the rural area is discussed. Three towns and four schools constitute the Union, and include Northumberland, Stark, and Stratford. Based on a community needs assessment, the National Institute of Education funded project has utilized human and natural resources to foster positive attitudes toward learning and to develop community resource facilities as learning centers. A comprehensive (K-12) career education program utilizing field trips, lesson cards, guest speakers, minicourses, and worksite placement has been developed by staff members, based on career awareness testing and item analysis data. Item analysis has indicated specific occupational areas where efforts can be concentrated to raise career awareness levels in students. Appended material takes up over half the document and includes a variety of program related materials: needs assessment forms; resource guide, with sample lesson plan; area seminar listing; worksite objectives; inservice training strategies; sample awareness lesson; career awareness and maturity inventory; tables with statistical and intervening activities data; and cost analysis. (Author/LH)

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ABSTRACT

" The Utilization of Natural, Social, and Human Community Resources in the Process of Student Career Awareness Development "

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New Hampshire Supervisory School Union 58 is the site of an Experimental Schools project. Funded by the National Institute of Education (NIE), the Union 58 ES project is one of ten sites nationwide charged with documenting and evaluating the process of program development.

As stated in the project's three year plan for the development of a comprehensive (Kindergarten through grade twelve) career education program - the utilization of community resource facilities as learning centers as well as available human resources to foster positive attitudes toward learning.

Several program development strategies (e.g., teacher workshops, teacher tours of the community resource sites, student field trips, classroom guest speakers) have been employed for the purpose of:

1. involving teachers in program development.
2. developing student-oriented career awareness lessons.
3. familiarizing teachers with a diversity of occupations and natural, social, and human community resources.
4. exposing students to natural and social resources as well as to community members and occupations.

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5. developing the level(s) of student awareness regarding a diversity of occupations within the world of work.

The Cornell Career Awareness Inventory (CAI) was used to determine the effect(s) of the ES project's career education program on career awareness growth among grades 5-8 students from March 1975 to January 1976.

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THE UTILIZATION OF NATURAL, SOCIAL, AND HUMAN COMMUNITY RESOURCES IN THE PROCESS OF STUDENT CAREER AWARENESS DEVELOPMENT

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NEW HAMPSHIRE SUPERVISORY SCHOOL UNION 58
EXPERIMENTAL SCHOOLS PROGRAM

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STATEMENT OF DEFINITION

> *"A new thrust in education was initiated by Sydney P. Marland in 1970 - career education. Marland described career education as creating a new climate within all schools and influencing every student. Career-oriented programs were conceived as comprehensive, beginning in the first grade or kindergarten.*
>
> *The role of the elementary school within the career developmental process is viewed as one of exploration and acquaintance. Within this exploration or awareness stage, several aspects are emphasized. These include among others: occupational knowledge, positive work attitudes, basic skills, social involvement, interests, interrelationship of self and education, role identification, decision-making skills and attitudinal development evolving from experiences, education, associations, understanding of self and human behavior.*
>
> *Marland outlined the role of the elementary school to be that of expanding career awareness within suggested clusters of occupations. In addition, the elementary school was to develop positive attitudes toward the significance of work, and to develop self-awareness.*
>
> *The role of education within career development . . . is regarded as one of building an awareness of the working world and of the self in relation to that world."*[1]

As we have defined career education, it is an on-going process which begins at an early age in the life of the child with the development of an awareness of careers and occupations, proceeds systematically through the stages of: exploration - developing an acquaintance with a diversity of careers and occupations as a result of direct exposure to- and interaction; counseling and guidance - determining student attitudes, aptitudes, and interests; and training - pre-service skills development, to the culmination of this process, job placement - the application of learned skills to a real work situation. This continuous process of skills acquisition, application, and enrichment on-the-job is periodically supplemented with in-service training programs and adult education classes.

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[1] Career Awareness Inventory: Teacher's Manual, Scholastic Testing Service, pgs. 9 and 12.

BACKGROUND

The National Institute of Education (NIE) funded a PROJECT RURAL Experimental Schools (ES) project in New Hampshire Supervisory Union 58 which incorporates the towns of Northumberland, Stark, and Stratford. (See Appendix A)

The Union 58 ES project became operational in July 1973 following a planning year. One unique thing about the ES projects was that local school systems were given the opportunity to plan and write their own strategies for comprehensive change.

The basis for the planning year project proposal (1972) was a community oriented needs assessment developed by UNCO, Inc., Rye, New Hampshire. The purpose of the needs assessment was to determine weak areas in existing curricula and to provide direction for instructional program enrichment. (See Appendix B)

> *If planning is necessary to build a school, then planning is certainly just as crucial in the vital task of designing the programs which are to take place in that building, where the finished product; educated young adults, the various components; academic and career guidance, and necessary activities; teaching and creating a learning environment, must all be brought together in a comprehensive plan. The initial step in the planning process is the assessment of needs. Without it, the finished product would be the result of pure guesswork."*[2]

As stated in the project's five year plan, the local ES project's statement of purpose was:

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[2]Educator's Handbook for Secondary Career Guidance Programs - New Hampshire Guideline, pg. 11.

"to develop a degree of credibility within the education process of Union 58 which makes it an integral and perceived part of the day-to-day, real life process of individual growth and accomplishment."[3]

The 1972 UNCO, Inc., needs assessment data indicated that:

1. student needed assistance in making realistic career choices. Their awareness of the nature and scope of occupational careers must be developed.

2. acquaintance with a diversity of occupations to be supplemented with the development and enrichment of basic skills, e.g., communications, decision-making, reasoning.

"All districts wanted to give their students at least a sampling of career experiences, enough to acquire some direction and a realistic understanding of the vocational opportunities and requirements involved.

Many districts proposed 'mini-courses' at the secondary level in order to allow students to explore new alternatives. In this way, students would no longer have to commit themselves to a whole semester in one trade, and could afford to sample several possibilities in the space of one year.

Career education stands out as a major curriculum change for these school districts. They saw new vocational programs as a way to satisfy an overwhelming need to prepare rural children more thoughtfully and more practically for a competitive society."[4] (See Appendix C)

The Union 58 ES project's central theme is:

"the development of a community centered school which:

a. utilizes available human and natural resources to foster positive attitudes toward learning.

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[3] Experimental Schools Program Proposal, August 1973, pg. 2.

[4] First Annual Substantive Report for a Study of Experimental Schools Projects In Small Schools Serving Rural Areas, pgs. 35-36.

b. *provides individuals with the basic psychomotor skills which will enable them to realize personal goals.*

c. *utilizes community resource facilities as a basis for lifetime learning opportunities".*[5]

Thus, with the operationalization of the Union 58 ES project in July 1973, the career/vocational education component was charged with providing students a perceptual enrichment process - to acquaint them with a broad spectrum of both present and future career employment opportunities; providing both in-school and on-the-job training opportunities which enhance skills development in a variety of occupational areas; and incorporating human and natural resources into the curriculum.

Union 58 is located in the northern extremes of New Hampshire. Nestled in the northern foothills of the White Mountains National Forest, the towns of Northumberland, Stark, and Stratford are classified as rural communities having small school systems.

To the north of Union 58 is the town of Colebrook; a community of approximately 2,500 population and limited community resources. To the south is Lancaster - a community of approximately 3,500 population - also with limited community resources. The area's largest community, with a population of nearly 16,000, is Berlin - located approximately twenty-five miles east of Union 58.

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[5] Experimental Schools Program Proposal, pg. 1.

Although Berlin, Colebrook, and Lancaster have regional vocational centers which were utilized to a limited degree by Union 58 students, each of these communities has an education system autonomous of Union 58.

Union 58 is located in a geographical area which limits the utilization of neighboring community resource facilities. Therefore, Supervisory Union 58 must rely heavily upon the identification and utilization of local community resources; natural, social, and human.[6]

The reasons for utilizing these resources were to foster positive learner attitudes toward learning and to facilitate lifetime learning opportunities.

Prior to the creation of the ES project's (K-12) career education program, the only semblance of a comprehensive program was at the grades 9-12 level with a distributive education program in the business education department, industrial arts, a work-study program, and the placement of selected students at the berlin technical/vocational school on a half-day basis - five days per week.

THE UNION 58 ES CAREER EDUCATION PROGRAM

ORGANIZATION

The Union 58 ES project's career education program

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[6] Natural environmental resources: non-man made phenomena found within the boundries of a given geographical area, e.g., forests, lakes, marshes, mountains, ponds, rivers.

Social environmental resources: man-made phenomena found within the boundries of a given geographical area, e.g., bridges, dams, factories, homes, stores, transportation facilities.

Human environmental resources: the people who live and work within the boundries of a given geographical area.

incorporated several instructional strategies and learning experiences into it's design to develop student awareness, provide for student exploration of diverse occupations, assist students in making intelligent and informative career decisions, and to provide student with on-the-job training which effect skills development (See Appendix D)

> *"Career development occurs during the lifetime of an individual. It can be described in maturational terms denoting progression through life's stages and the mastery of developmental tasks at each stage.*
>
> *Development is a continuous process. Individual development can best be facilitated by intervention strategies that begin in the early years and continue throughout the life of the person*
>
> *Although development is continuous, certain aspects are dominant at various periods in the life span. Programs designed to facilitate career development should account for the dominant aspects at given stages."*[7]

The Union 58 ES project provided for dominant aspects at given stages:

1. awareness lessons; kindergarten through grade twelve instructional lessons written by classroom teachers for purposes of effecting and enriching student awareness of occupations in the world of work. Lessons were accumulated into a teacher resource guide along with lists of community resource people and sites. (See Appendix E)

2. career counseling; guidance personnel conducted both a series of group career counseling meetings and counseling meetings with individuals to assist them in decision-making at grades 7-8.

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[7] Position Paper on Career Development, pgs. 3-4.

"Along with the knowledge of self and the world of work, youth needs help in decision making skills.

Decision making must be seen as equal and complimentary when integrated with one's values and a knowledge of the world of work in presenting an educational program with emphasis on assisting individuals."[8] *(See Appendix F)*

3. career seminars; guest speakers appeared before groups of students in grades 7-12 to discuss their occupations and related education/training needs. Seminars were organized around the several world of work clusters. (See Appendix G)

4. field trips; groups of students (K-12) were taken out into the community - as part of instructional lessons - to both observe and interact with local area resources.

5. guest speakers; community resource people appeared in (K-12) classrooms for purposes of meeting with students and to discuss their jobs.

6. mini courses; elective skills development courses offered to students in grades 10-12. Among the several ten week courses offered were building trades (4), small engine repair (2), and surveying (2).[9]

7. worksite placement seminars; prior to being placed at area worksites, students (grades 10-12) attended

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[8] Educator's Handbook for Secondary Career Guidance Programs - New Hampshire Guideline, pg. 26.

[9] The numbers in parentheses denote the total number of quarters each course was offered during a given school year, e.g., building trades is a year long (4 quarters) 11th grade course.

pre-placement counseling sessions. Contracted services consultants discussed work related attitudes, behavior, and decision-making with students.

8. worksites; students were placed at community resource sites, both natural and social, for purposes of pre-service training and skills development. Prior to student placement at a given worksite of his/her choice, a series of instructional objectives were developed in conjunction with the site supervisor. Both the student(s) and the site supervisor(s) were periodically interviewed and the student(s) kept weekly records of site activities and training. Collectively, the site objectives, the periodic interviews, and the weekly student reports provided the basis for evaluating the student's learning experience and the educational value of the site(s). (See Appendix H)

COMMUNITY RESOURCES UTILIZATION

Both natural and social resources were used as lesson materials, e.g., minerals and vegetation, manufactured products, and social services; as field trips sites, worksites, and as community study sites.

Community inhabitants representing a wide variety of educational backgrounds, occupations, and skills/training were directly involved in both the development and implementation of the career education program as:

.guest speakers into classrooms (K-12)

.field trip site guides (K-12)

.teacher in-service training consultants (K-12)

.mini course instructors (9-12)

.worksite supervisors (10-12)

.post-secondary adult education instructors

IN-SERVICE TRAINING

In order to develop and implement a diverse instructional program there was a need to first, prepare the instructional staff, i.e., classroom teachers and support personnel, and second, to involve them in the process of change.

One of the project's sincerest efforts was to redefine the 'school day' concept in the minds of school board members, administrators, and teachers and support personnel, as well as the community at large.

As traditionally defined, the school day has meant a given number of hours of daily teacher-student contact time - and nothing more! Our ES project's concept of the school day not only provided for hours of direct teacher-student contact time but also provided for release time whereby teachers could develop lessons, prepare materials, plan upcoming activities, meet with other professionals in planning situations, attend conferences and workshops, and visit other classrooms and/or buildings both within and outside the local system.

In the career/vocational education component several in-service activities were developed and scheduled for classroom teachers. The training strategy included:

1. workshops; all-day and half-day release time sessions which provided opportunities for skills development, materials construction, 'how-to-do-it' techniques, and program orientation, as well as lesson development and curriculum writing.

"The purpose of any in-service workshop program is threefold:

1. *the educational enrichment of teachers, supervisors, curriculum specialists, and administrators.*
2. *recertification credit.*
3. *direct teacher involvement in the decision making process of the school system.*

The success of any workshop program is dependent upon the degree to which it directly involves the classroom teacher and meets his/her immediate as well as long range needs and interests."[10]

2. minishops; two hour-or-less long enrichment activities concerned with materials introduction and 'how-to-do-it' demonstrations. They were usually scheduled after school, on Saturdays, or during school vacations.

3. skillshops; scheduled as follow-ups to workshops, skillshops were geared toward skills enrichment and were usually schedule for short periods of time either after school, on Saturdays, or during school vacations. (See Appendix I)

4. field trips and tours; opportunities for teachers to explore the natural, social, and human resources within their communities for purposes of awareness,

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10 Richard Peters, "In-Service Workshops", The Common, June 1973, pg. 4.

orientation, and incorporation into the instructional process - to benefit student learning.

5. guest speakers; community resource people who instructed teachers in skills application to their jobs and who developed teacher awareness of their occupations and related community resources/sites.

6. visitations; professional visits to other teachers/classrooms within Union 58 and also to classrooms/buildings outside Union 58 for purposes of awareness of- and orientation to instructional techniques, materials, programs, and learning activities/experiences.

Prior to writing instructional lessons, teachers were involved in a series of workshops, minishops, and skillshops for purposes of awareness and orientation, materials acquaintance, and skills development.

Once lessons were written they were classroom tested by teachers, evaluated by them, and revised - if necessary. These tested lessons were compiled into a teacher resource guide - along with the names of community resource people and sites - and copies distributed to teachers and support personnel on September 2, 1975. As a result of program development in grades 7-12 during the 1975-1976 school year, another resource guide will be prepared in July 1976 - for distribution to teachers at the pre-school staff orientation meeting in September 1976.(See Appendix J)

CAREER TESTING

"In order to better meet the career needs of students in Union 58, it is first necessary to determine at what level these students are performing. For the purposes of the ES project career testing program (CTP) four (4) areas have been identified as being of importance in the student career decision-making process. These areas are:

1. *awareness of occupations: Students should be aware of a wide variety of occupations in order to have a variety of choices available in their career decision-making process.*

2. *attitudes toward work: Without a positive attitude toward the world of work the student's career decision-making process will be hindered.*

3. *career choice competencies: These competencies deal with the student's ability to make realistic career choices.*

4. *aptitudes for work: Students should be aware of their career aptitudes and should use this information in their career decision-making process."*[11]

For purposes of this study, the ES project's research in career awareness development was confined to Super's interest and capacity stages of growth - due to the age range of the sample population (10-14 years of age).

> *"Likes and dislikes become the major determinents of aspirations and activities during the interest stage. During the capacity stage, abilities and occupational requirements and training become a concern."*[12]

The Cornell Career Awareness Inventory[13] (CAI) was selected for use to provide information concerning the occupational awareness level of students in Union 58.

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[11] Union 58 Career Testing Program (handout), pg. 1.

[12] Reference to D. E. Super, "A Theory of Vocational Development" in CAREER AWARENESS INVENTORY: TEACHER'S MANUAL, pg. 11.

[13] The Career Awareness Inventory was developed by the Cornell Institute for Research and Development In Occupational Education and is published by Scholastic Testing Service, 480 Meyer Road, Bensenville, IL 60106.

A second testing instrument was selected and used. This was the CTB/McGraw Hill Career Maturity Inventory (CMI). This instrument is designed to assess student attitudes toward the world of work as well as measure student career choice competencies. (See Appendix K)

Results of the Cornell Career Awareness Inventory (CAI) item analysis indicated a great deal of consistency in wrong response selection of the students tested in grades 5-8. Among the occupations that students had trouble recognizing were: accountant, archietect, bookkeeper, clerk, dispatcher, economist, electronic technician, journalist, lawyer, mechinist, pharmacist, and salesman.

The CAI results were given to the career education coordinator and project director. Plans were then developed to conduct a two week lesson development workshop for selected teachers. In July 1975, four teachers met with the component coordinator and began the process of their exposure to low awareness occupations - then application of gained knowledge to lesson development.

During the course of the two weeks, the workshop participants interviewed representatives of several different occupations, e.g., dispatcher, lawyer, mechinist, pharmacist; and toured several community resource facilities, e.g., local mill. In all, the workshop resulted in the development of sixteen awareness lessons.

Beginning in September 1975, lessons developed during the course of the two week workshop were introduced into Union 58 elementary grade classrooms.

It was mandated that as of September 1975, the project's career awareness program would be implemented in Kindergarten through grade six classrooms.

At the Fall 1975 pre-school orientation, teachers were introduced to the assemblage of information which comprised the Career Education Teacher Resource Guide (i.e., career lessons and suggested activities, available hardware and software, and the names of volunteer community resource people). Using this guide during the course of the 1975-1976 school year, teachers selected those lessons, materials, and personages which best suited their classroom curricula, as well as met the interests and needs of students.

Once lessons and related activities were completed (e.g., Bread and Butterflies films, field trips, guest speakers), the teachers filled out lesson evaluation forms. These forms were filed with the Level I Evaluator. In this way, the project staff was able to continuously monitor the process of program implementation.

By December 31, 1975, as a result of the concerted effort to achieve program implementation, a total of 561 Kindergarten through grade six students (100% of the Union 58 elementary school population) had been involved in career awareness activities. Although program development was still in progress at the grades seven through twelve level - as of December 31st, a total of 150 students had been involved in career awareness activities and experiences. This figure represented approximately 28% of the Union 58 secondary school population.

During the March 1975 to January 1976 CAI pre-post testing interval, a total of 1048 Kindergarten through grade six students (487 from March-June and 561 from September-December 1975) and 281 grades seven through twelve students (131 from March-June and 150 from September-December 1975) were directly exposed to- and involved in career awareness activities and experiences.[14]

TESTING PROCEDURE

In order to determine the degree of student career awareness growth over a given period of time, a short term longitudinal research study was designed - identifying Union 58 students in grades 5-8 as the target population. It was the conviction of the project staff involved in the study that "the single most important contribution of longitudinal data is that they facilitate the identification of causal relationships that cannot confidently be identified in any other way".[15]

The Career Awareness Inventory pre-test was administered to Union 58's 5th-8th grade students on March 3, 5, 10, 11, and 12, 1975. Groups of students were tested by classroom teachers, guidance counselors, and the project's level I evaluator. A total of 346 students were involved in this activity.

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[14] During the course of the 1973-1974 school year a total of 414 students (K-12) were involved in career education activities (e.g., field trips, cluster lessons, mini courses, worksites).

[15] Herbert Parnes, "The National Longitudinal Surveys: New Vistas for Labor Market Research", THE AMERICAN ECONOMIC REVIEW, May 1975, pg. 246.

The intervening treatment was: student exposure to- and direct involvement in program activities (e.g., Bread and Butterflies films, field trips, lessons, mini courses, worksites). (See Appendix L).

The Career Awareness Inventory post-test was administered to Union 58's 5th-8th grade students on January 13, 14, and 29, 1976. Groups of students were tested by classroom teachers, a guidance counselor, and the project's level I evaluator. A total of 369 students were involved in this activity. Only the pre-test and post-test scores for those students whose previously recorded pre-test data were on file were compared for purposes of this study. As a result, 232 students in grades 5-7 (1974-1975) comprised the target population data analysis group.[16]

ANALYSIS OF DATA

Inferential statistical processes were employed to analyze data. The 't' test was used to determine the significance of difference(s) between pre- and post-test means at the .05 level of confidence. The test/retest correlation coefficient, as well as the standard deviation (σ) and standard error of means, was calculated. (See Appendix M)

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[16] The 1974-1975 school year 5th-7th graders were 1975-1976 school year 6th-8th graders respectively. The 1975-1976 5th graders were not tested in 1974-1975 as 4th graders and 1974-1975's 8th graders were not tested in January 1976.

Computers at Plymouth State College and at the University of New Hampshire (Durham) were used in the data analysis process.

RESULTS

As a result of the CAI pre-post testing in Union 58, data analysis indicates that:

1. at the 5th-6th grade level, significant differences existed between pre-post test mean scores at the .05 level of confidence for all three testing sites; Groveton, Stark, and Stratford. The March 1975 pre-test mean for Groveton was 89.49 and the January 1976 post-test mean was 93.34 - resulting in a pre-post test mean difference of + 3.85. Pre-post mean scores for Stark were 69.33 and 87.77, with a mean difference of + 18.44, while the pre-post test mean scores for Stratford were 71.44 and 84.44 - resulting in a mean score difference of + 13.00.

2. at the 6th/7th grade level, there was no significant difference between pre-post test mean scores at two testing sites; Stark and Stratford. There was significant difference between pre-post test mean scores at Groveton Elementary School. The pre-post test means were 83.75 and 89.43 respectively - with a mean difference of + 5.68.

3. in grades 7th/8th, significant differences existed between pre-post test mean scores at all testing sites; Groveton and Stratford.[17] While the Groveton pre-post test means were

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[17] Stark students in grade 8 are treated as Groveton High School students for purposes of this study.

89.49 and 93.34, with a mean score difference of + 3.85, the Stratford pre-post test means were 78.87 and 91.93 - resulting in a mean score difference of +13.06.

4. union wide, there was significant difference between pre-post test mean scores for grades 5-8; 84.50 and 91.09 respectively, with a mean score difference of + 6.59.

CONCLUSIONS

When using the terms 'intervening activities' or 'intervening treatment' in the context of this study, reference is made to *only* project related activities and experiences, e.g., career awareness lessons, field trips, seminars, mini courses, and training site placement.

As a result of the analysis of CAI pre-post test data, several inferences can be made regarding the effect(s) of the ESP career education program on student career awareness development.

1. At the 5th/6th grade level, there was significant growth in students' level(s) of awareness throughout the union - at all testing sites. This factor of significance was determined at the .01 level of confidence as well as at the .05 level. The reason for student growth can possibly be attributed to intervening activities and/or new teachers. (See Appendix M - Intervening Activities, Tables I, II, and III).

2. At two testing sites; Stark and Stratford, there was no significant growth in the level of awareness among 6th/7th grade students. There was significant awareness growth among 6th/7th grade students at Groveton (at the .05 level of confidence). There were no intervening career education activities at the 7th grade from September 1975 to January 1976 at either Groveton High School or Stratford High School.[18] The reason for awareness growth among Groveton Elementary School students (6th graders in 1974-1975) can possibly be attributed to the large number of intervening activities with which they were involved from March 1975 to June 1975. (See Appendix M - Intervening Activities Table VI)

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[18] The Groveton High School 7th grade includes Stark students.

COST ANALYSIS

One important and realistic consideration which must be made when adopting or developing an instructional program is cost.

An important facet of the several ES project was the development of programs which required only a minimum cost to maintain and operate at the local level; once the projects were phased out.

Since July 1973, the Union 58 project has analyzed and documented the cost of activities involving both students and teachers. (See Appendix N)

STATEMENT OF IMPORTANCE

The importance of the Union 58 ES project's career education program is that it provides a 'how-to-do-it' model for similar small rural systems across the nation which have limited financial resources but exist within communities having a wealth of untapped human, natural, and social resources - resources which can be incorporated into the instructional process - at a minimum of expense.

> *"Career awareness can be incorporated with traditional skills and attitude development within the . . . school curriculum. Specifically, career-oriented programs usually tend to encourage the beginnings of information levels for (1) occupational requirements, (2) awareness to occupations, (3) decision-making process, (4) economic and social values of work, and (5) psychological and sociological meaning of work and characteristics of the self."* [19]

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19 Career Awareness Inventory: Teacher's Manual, pg. 15.

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APPENDICES

APPENDIX A: UNION 58

Supervisory Union 58 is located in Coos County and has a geographical area of approximately 179 square miles.

As of the 1970 census, the Union's total population was 3,816; Northumberland (2,493), Stark (343), and Stratford (980).

The major industries of the area are manufacturing (paper and wood products), retail trade and services.

As of the 1975-1976 school year, the total Union 58 school population was 1,104; Northumberland (765), Stark (49), and Stratford (290).

The Union 58 school system consists of four (4) schools; a K-6 elementary school and grades 7-12 secondary school in Northumberland, a grades 1-6 school in Stark, and a grades 1-12 school in Stratford.

Appendix B: Needs Assessment

During the months of January and February 1973, a needs assessment was conducted among the teachers, students, and parents of Union 58. The feedback from this needs assessment formed the basis for the ES project's three year program proposal.

EXCERPTED SEGMENTS

NEEDS ASSESSMENT QUESTIONNAIRE - STUDENT

General Information. (Circle the number of the correct answer)

1. Did you have an after-school job last year? . . Yes 1 No 2

2. Does more than one family live in your house/building?
Yes 1 No 2

3. How much did you learn in these subjects last year?

	A Lot	Some	Nothing	No Course
Language Arts	1	2	3	4
Mathematics	1	2	3	4
Science	1	2	3	4

4. I like to meet new people

Strongly Agree 1 Agree 2 Disagree 3 Strongly Disagree 4

5. I am an important person to my family

Strongly Agree 1 Agree 2 Disagree 3 Strongly Disagree 4

NEEDS ASSESSMENT QUESTIONNAIRE - PARENT

General Information. (Circle the number of the correct answer)

1. Did your child have an after-school job last year? Yes 1 No 2

2. How much schooling has the child's father had?

None 1 Elementary School 2 Completed Eighth Grade 3
Some High School 4 High School Graduate 5 Some College 6
College Graduate 7 Graduate School 8

3. How much schooling has the child's mother had?

None 1 Elementary School 2 Completed Eighth Grade 3
Some High School 4 High School Graduate 5
Some College 6 College Graduate 7 Graduate School 8

NEEDS ASSESSMENT QUESTIONNAIRE - TEACHER

STUDENT DATA. Please circle the number or insert data as indicated.

a. Sex . . . . . M 1 F 2

b. Grade Level . . . _____

c. Scholastic Ability Level
(Use 1971-1972 statewide testing program data, if possible).

d. Is this student receiving any special education service at this time?
Yes 1 No 2

e. Was this student employed last year? Yes 1 No 2

f. This student's language fluency is mainly:
English only 1 French only 2 Bilingual 3

g. English or Language Arts/Reading:
Oral Expression
Written Expression

h. Does this student have poor relations with his peers?
Yes 1 No 2 Unknown 3

i. Does this student appear to have a poor self-concept?
Yes 1 No 2 Unknown 3

j. This student appears to have good work habits.
Yes 1 No 2 Unknown 3

k. This student appears to have a good knowledge of the world of work. Yes 1 No 2 Unknown 3

l. This student appears to have good vocational skills.
Yes 1 No 2 Unknown 3

m. PEER INTERACTION IN THE CLASSROOM

n. CHARACTERISTICS OF INDEPENDENT WORK IN CLASS

o. PERSEVERANCE IN A DIFFICULT PROBLEM SITUATION OVER A PERIOD OF TIME

p. ACADEMIC CARRIAGE

q. SOCIAL CARRIAGE

r. SELF CONTROL

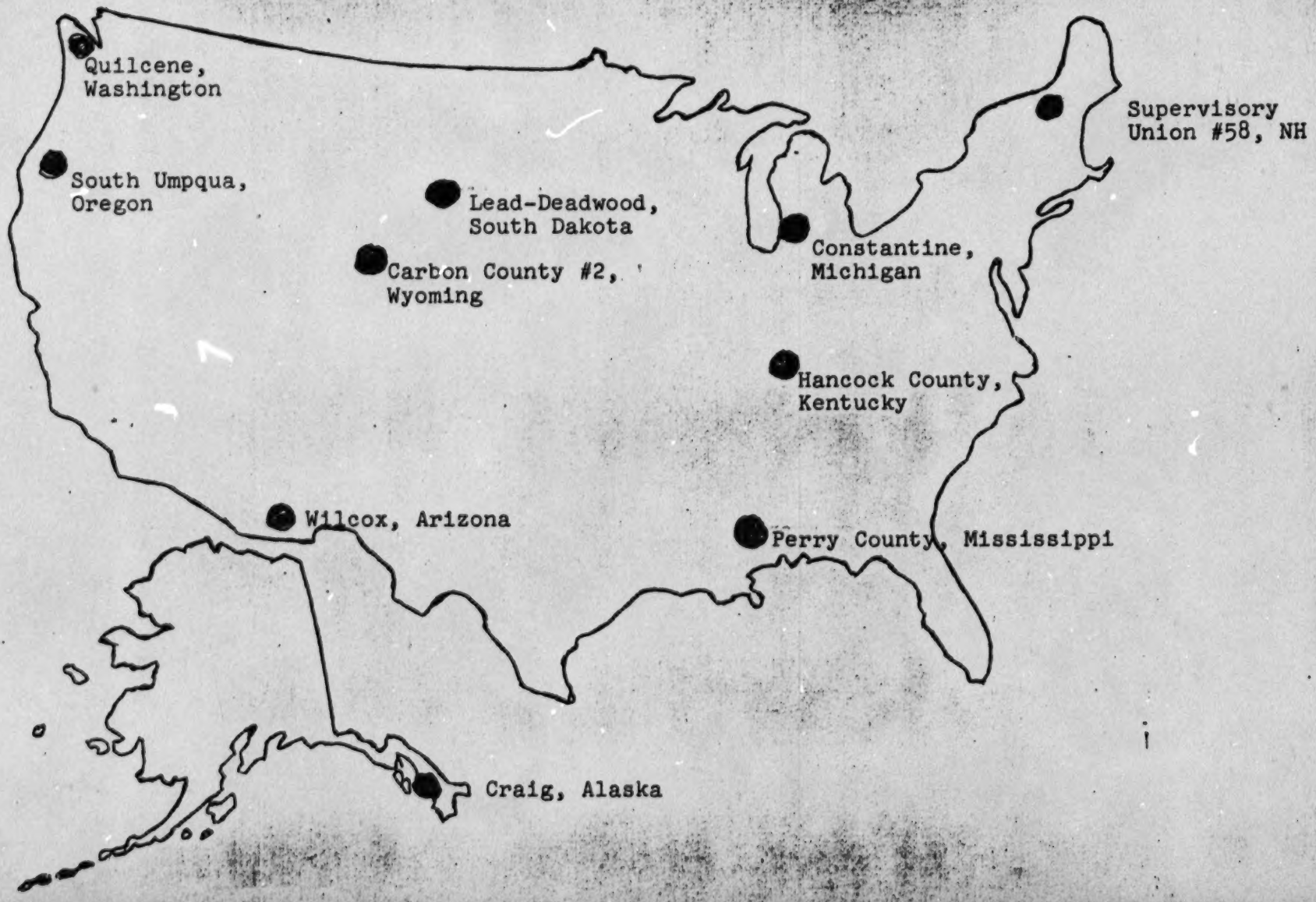
s. PRIDE IN WORK

t. COPING BEHAVIOR EXHIBITED WHEN FACED WITH A PROBLEM

u. MOTIVATIONAL LEVEL EXHIBITED IN DIFFERENT SITUATIONS

v. ASPIRATION LEVEL EXHIBITED UNDER VARYING CONDITIONS

APPENDIX C: GEOGRAPHICAL LOCATION OF THE TEN EXPERIMENTAL SCHOOLS PROJECTS



APPENDIX D: PROGRAM ORGANIZATION

A continuous, integrated and sequential process through the grades

In depth awareness/exploration/skills development/experiences within the grade(s)

K	1							
	1	2	3					
			3	4	5	6		
							7	8

Theme: SELF AWARENESS

Theme: AWARENESS OF COMMUNITY HELPERS

Theme: AWARENESS OF THE WORLD OF WORK

Theme: CAREER AWARENESS EXPLORATION

(K-6: .Awareness lessons
.Field trips
.Guest speakers)

.Career Seminars
.Awareness/exploration lessons in cluster areas
.Career guidance/ counseling

Theme: CAREER AWARENESS/EXPLORATION/ SKILLS DEVELOPMENT

9	10	11	12

.Mini Course
.Career Seminars
.Awareness/exploration lessons in cluster areas.
.Worksite placement for exploration and hands-on skills development/experience.

APPENDIX E: RESOURCE GUIDE

SAMPLE LESSON

PHYSICAL THERAPIST GRADE RANGE: 5-7

CONCEPT: To develop an awareness of others and occupations.

STATEMENT: The purpose of this lesson is to learn about the physical therapist.

LESSON: (1-3 class days - 30 minutes/class)

1. Acquaint the students with the duties of a physical therapist. Have a physical therapist come to the classroom and demonstrate exercises that are used.

MATERIALS:

1. How Hospitals Help Use (sound/filmstrip)
2. Doctors and Nurses: What do They do? (sound/filmstrip)
3. Learning About Growth and Exercises (film)
4. Helping with Helping Hands (film)

SUGGESTED ACTIVITIES:

1. A physical therapist - as a guest speaker.
2. Demonstration of the use of a walker.
3. Demonstration of simple theraphy exercises, e.g., squeezing a ball, lifting weights with your foot.

VOCABULARY WORDS:

.Fractures	.Therapy
.Muscles	.Ultra-sound
.Hot packs	.Crutches
.Whirlpool	.Traction

EVALUATION:

1. Be able to tell what a physical therapist does.
2. Be able to determine why the physical therapist is important.
3. Make a booklet about this career - for purposes of demonstrating one's understanding of the occupation.

TEACHER REFERENCES:

Title: Registered Physical Therapist
Job: Help others get muscles, etc., back into condition after breaks, fractures, etc.
Preparation: 4 years of college - a B.S. degree in a medical oriented program.
Assistant Therapist: 2 years of programs in junior college.
Work areas: Hospitals, rehabilitation centers, private homes.

RESOURCE PEOPLE

Occupation: Lawyer (legal profession)

NAME: _____

ADDRESS: _____

_____

TELEPHONE: _____

CLASS PRESENTATION: Grades 8-12
Explaination of education required, special aptitudes, and duties of a lawyer.

Occupation: Pharmacist

NAME: _____

ADDRESS: _____

_____

TELEPHONE: _____

CLASS PRESENTATION: Grade 6-12
Explaination of a pharmacist's job and also, pharmacy procedures, federal regulations governing drugs, the operation of a business

Occupation: Physical Therapist

NAME: _____

ADDRESS: _____

_____

TELEPHONE: _____

CLASS PRESENTATION: Grades 4-12
Duties and responsibilities of a physical therapist, with some in-class demonstrations of excercises.

****

RESOURCE SITES

SITE: Upper Connecticut Valley Hospital

CONTACT PERSON: _____

ADDRESS: _____

_____

TELEPHONE: _____

SITE VISITATION REQUIREMENTS: Grades 9-12
Time - 30 minutes
Chaperones - 2
Maximum Number of Students - 10

SITE ACTIVITY: Tour of the hospital facilities and daily hospital routine.

SITE: Groveton Papers Company

CONTACT PERSON: _____

ADDRESS: _____

_____

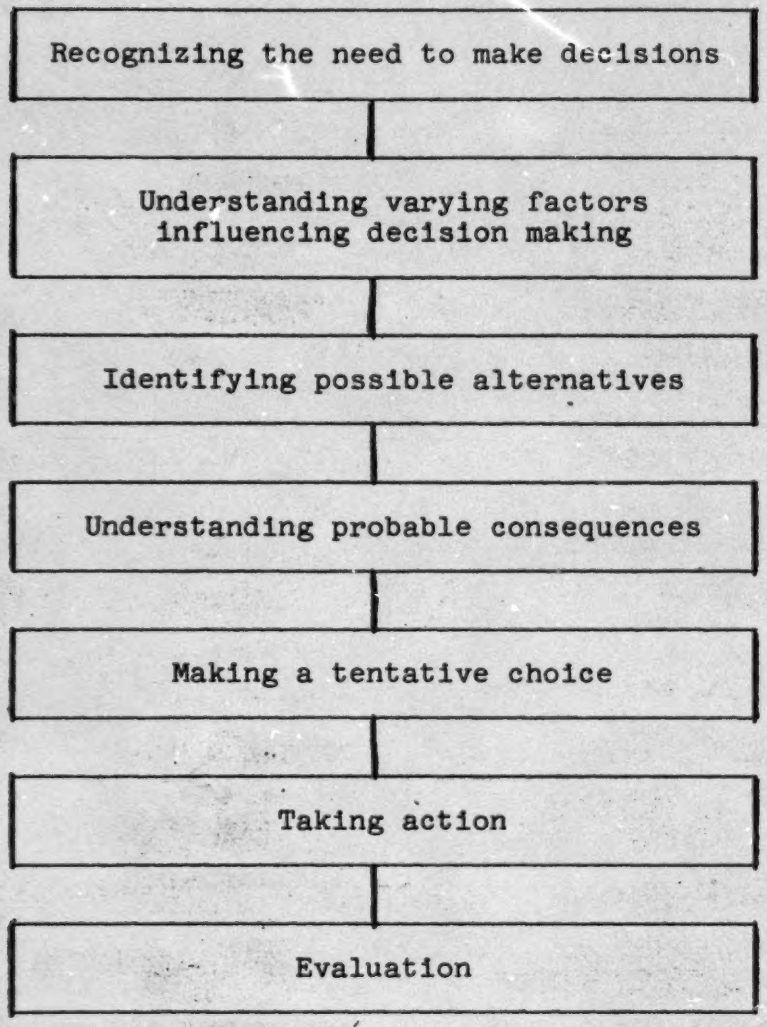
TELEPHONE: _____

SITE VISITATION REQUIREMENTS: Grade 12
Time - 2 hours
Chaperones - 3
Maximum of Number of Students - 20

SITE ACTIVITY: Tour of the paper mill and awareness of mill activities

APPENDIX F: DECISION MAKING PROCESS MODEL

DECISION MAKING PROCESS MODEL[1]



"True education change of the type called for in career education can only take place if each community develops its own program based upon its perceived needs and priorities. Only in this way can the necessary investment and ownership in the change take place and have a lasting effect on the students who pass through that system."[2]

Excerpted from:

[1] EDUCATOR'S HANDBOOK FOR SECONDARY CAREER GUIDANCE PROGRAMS - NEW HAMPSHIRE GUIDELINE, pg. 26, with permission of the authors.

[2] THE NEW HAMPSHIRE HIGH SCHOOL CAREER EDUCATION MODEL, pg. 1, with permission of the authors.

APPENDIX G: CLUSTER AREA SEMINARS

SEMINARS DATE	CLUSTER AREA/TOPIC	# of Students Involved	ACTIVITY COST
April 8, 1975	Public Service: US Border Patrol	38	----
April 22, 1975	Public Service: Federal Bureau of Investigation	45	----
May 13, 1975	Public Service: NH State Police	41	----
September 16, 1975	Health: Nursing	4	----
September 23, 1975	Health: Inhalation Therapist	10	----
October 14, 1975	Health: Nursing Administration	21	----
October 28, 1975	Health: Physical Therapist	32	----
November 18, 1975	Health: X-Ray Technologist	20	----
December 4, 1975	Business + Office: Data Processing	25	----
December 10, 1975	Business + Office: Hospital Office Occupations	14	----

WORLD OF WORK CLUSTERS - As Developed By The US Office of Education

1. Agri-Business
2. Business and Office
3. Communication and Media
4. Construction
5. Consumer and Homemaking Education

6. Environmental and Natural Resources
7. Fine Arts and Humanities
8. Health
9. Hospitality and Recreation
10. Manufacturing
11. Marine Science
12. Marketing and Distribution
13. Personal Services
14. Public Service
15. Transportation

CAREER GUIDANCE[1]

GRADE	# OF STUDENTS	SETTING
7	40	Group(s)
8	12	Group(s)
9	12	Group(s)
10	30 24	Group(s) Individual
11	30	Individual
12	66	Individual

[1] The process of introducing career guidance into the instructional program (grades 7-12) began during the course of the 1974-1975 school year. This program has been continued into the 1975-1976 school year with the breakdown of activities being provided in the preceding table.

APPENDIX H: WORKSITE OBJECTIVES

Sample Site Objectives

NAME OF STUDENT: _____

SCHOOL: Groveton High School

HOURS OF WORK: Monday, Wednesday, Friday - 1:20 pm to 1:45 pm

LOCATION: Groveton Elementary School

SUPERVISOR: _____

OBJECTIVES:

1. To develop an awareness of children at the grade two level with respect to mental characteristics including attitudes and abilities.
2. To learn how to work with children individually and in small groups.
3. Be able to make out a lesson plan.
4. Be acquainted with the duties and responsibilities of a second grade teacher.
5. Become familiar with the various areas students are taught in at the second grade level.

EVALUATION: Students are required to complete at the end of the week a Student Weekly Evaluation form describing what they observed/did during the week.

The supervisor will complete an Employers Rating of Work Performance form regarding the supervisor's impression of each student.

Appendix I: In-Service Training Strategies

WORKSHOPS

July 1973 - Teacher orientation to career education and the development of cluster booklets (k-12)

July 1974 - Teacher development of career cluster awareness lessons (K-6)

July 1975 - Teacher exposure to low awareness occupations and the development of career cluster awareness lessons (K-6)

MINISHOPS

November 1973 - Teacher introduction to career cluster booklets and materials (K-12)

January 1974 - Career awareness materials orientation (K-6)

October 1974 - Introduction to the Bread & Butterflies career awareness film series (grades 7-8)

- Introduction to the NH Developmental Counseling program (grades 9-12)

November 1974 - Introduction to the Bread & Butterflies career awareness film series (grades 5-6)

SKILLSHOP

November 1974 - "Construction and Use of Career Awareness Materials" (K-4)

- Introduction to video tape equipment and equipment application to career awareness/ exploration activities (K-12)

January 1975 - "Constructional and Use of Career Awareness Materials" (grades 5-6)

October 1975 - "How to Organize and Conduct Career Awareness Instructional Activities" (K-6)

APPENDIX J: SAMPLE AWARENESS LESSONS

BANK TELLERS GRADE RANGE: 3-6

CONCEPT: To develop an awareness of others and occupations.

STATEMENT: The purpose of this lesson is to learn about bank tellers.

LESSON: (1-3 days - 30 minutes/class)

1. Discuss bank business, e.g., check cashing, deposits.
2. Visit the bank to observe how the bank works.
3. Set up a bank in the classroom and role play bank personnel's jobs

VOCABULARY:

.Adding Machines	.Money
.Computors	.Loan
.Teller	.Interest
.Clerk	.Federal
.Check	

****

COMMUNITY HELPERS GRADE RANGE: 2

CONCEPT: To develop an awareness of others

STATEMENT: The purpose of this lesson is to acquaint students with the people involved in the operation of a store.

LESSON: (2 class days - 30 minutes/class)

1. Discuss the many different workers who are needed to operate a store.
2. A field trip to a grocery store.
3. Notice the many different products sold in a grocery store.
4. Why is a store important to the people in the community.
5. A comparision of stores in older days and the modern supermarkets.

SUGGESTED ACTIVITIES:

1. Set up a make-believe store. The children role play the various workers in the store.
2. Draw pictures of the store.

3. Have a meat cutter as a guest speaker.

4. Have a guessing game. A child describes the duties of someone in a grocery store. The others try to guess which worker it is.

5. Have children tell which worker they would like to be - and why. Give the importance and responsibilities of the worker they choose.

APPENDIX K: CAREER AWARENESS INVENTORY AND CAREER MATURITY INVENTORY

CAREER AWARENESS INVENTORY (CAI)

The Cornell CAI is divided into seven sections: student identification of specific occupations, occupational training, student familiarity with specific occupations, job function, job prestigue, occupational clusters, and the characteristics of specific occupations.

The CAI can be used for purposes of identifying the occupational awareness level of students in grades 5-8.

Norming:

The CAI is based on the Taylor Model for career education implementation into school curricula.

CAI is the result of two years of research and field testing in elementary schools. Approximately 250 elementary students from both urban and rural areas participated in the field testing of the inventory.

Stanine values for the total inventory score were formulated from administration of the instrument to 120 sixth-grade pupils enrolled in an upstate New York school district.

Odd-numbered items were correlated with even-numbered items for 120 elementary pupils in upper New York. The Spearman-Brown formula yielded a reliability coefficient of .80.

Given a standard deviation of 12 and a reliability coefficient of .80, the standard error of measurement is calculated to be about 5.4 raw-score points.

The Dictionary of Occupational Titles and Manpower Requirements served as validating sources for item writing. The inventory presents a rather low reading level.[1]

CAREER MATURITY INVENTORY (CMI)

The CTB/McGraw-Hill CMI is divided into two parts: an attitude scale and a competence test.

The CMI can be used to determine: consistency of career choice in relation to personal capabilities and employment opportunities; career choice attitudes; and career competencies.

The CMI attitude scale is used to gain attitudinal information on five attitudinal clusters - as surveyed by the inventory. The clusters are: involvement in the career choice process, orientation toward work, independence in decision making, preference for career choice factors, and conceptions of the career choice process.

Part II of the inventory; the competence test, is used to measure those cognitive variables in choosing an occupation: self appraisal, occupational information, goal selection, planning, and problem solving.

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[1] Reference to descriptive information contained in Career Awareness Inventory: Teacher's Manual, Scholastic Testing Service, pgs. 8-10.

Norming:

The ATTITUDE SCALE was not normed with a national sample. The primary consideration when norming the Attitude Scale was determining an individual's rate of career development in comparison to classmates.

Thus, local grade norms for the Attitude Scale were developed. Several reference group scores are provided in Appendix A tables of the CMI Administration and Use Manual (pgs. 39-47). These norms were gathered from several schools which administered the Attitude Scale.

In general, the most appropriate norms would be those collected locally for specific schools, systems and/or programs.

No attempt has been made to norm the Competence Test on a national sample.

Emphasis is placed upon the compilation of local normative data; concern for estimating an individual's or group's rate of career development.

Appendix B of the CMI Manual (pgs. 48-52) contains percentile tables based on the item selection sample. Additions to these norms are planned as cross-standardizations of the test are completed.

The value of the norms (based upon a relatively small number of cases) lies in providing a point of reference for expressing the relative career maturity of individual or group.

"The CMI has been conveived and constructed to measure the maturity of attitudes and competencies that are critical in realistic career decision making.

The Attitude Scale elicits the feelings, the subjective reactions, the dispositions that the individual has toward making a career choice and entering the world of work.

The Competence Test measures the more cognitive variables involved in choosing an occupation. These include: how well the individual can appraise his job-related capabilities (strengths and weaknesses); how much he knows about the world of work; how adept he is in matching personal characteristics with occupational requirements; how foresightful he is in planning for a career; and how effectively he can cope with the problems which arise in the course of career development.

Taken together, the Attitude Scale and the Competence Test provide both an extensive and intensive inventory of the critical behaviors in mature career decision making and development."[3]

(From Career Maturity Inventory by John O. Crites. Copyright © 1973 by McGraw-Hill, Inc. Quoted by permission of the publisher, CTB/McGraw-Hill, Del Monte Research Park, Monterey, CA 93940. All Rights Reserved. Printed in the U.S.A.)

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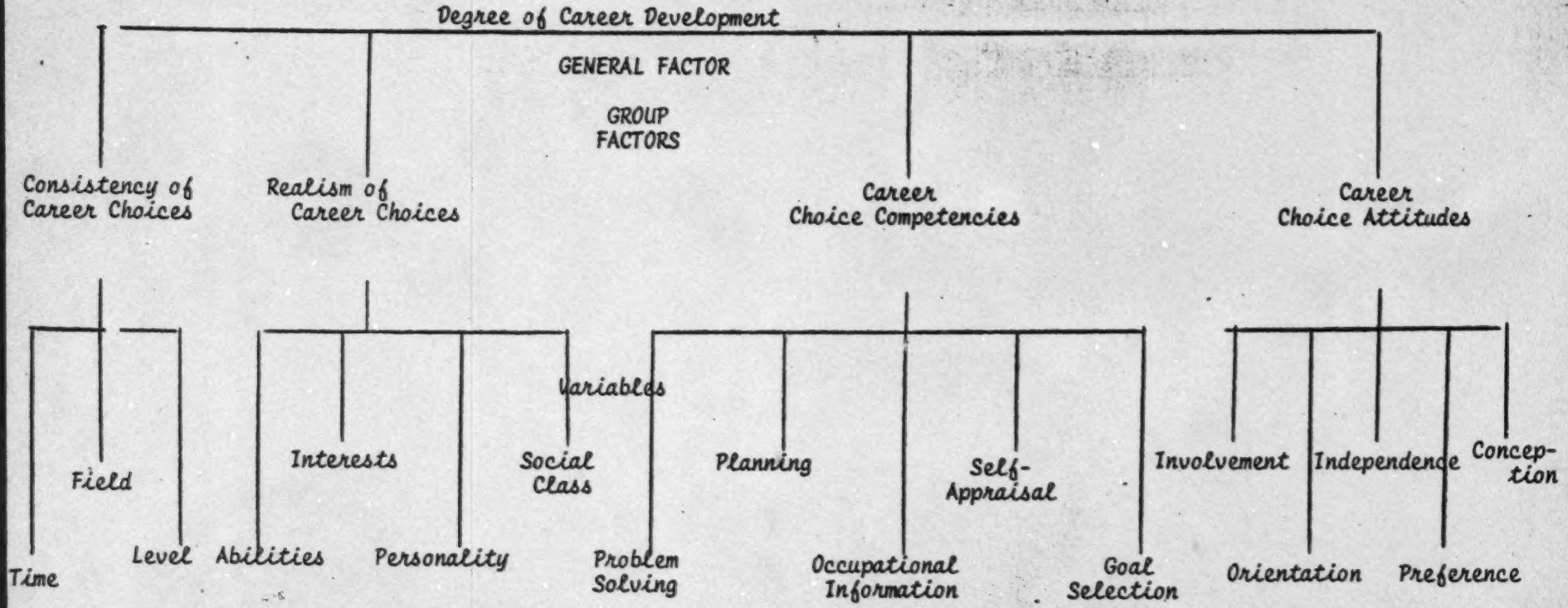
3 Career Maturity Inventory: Administration and Use Manual, CTB/McGraw-Hill, pgs. 3-4.

APPENDIX L: DEGREE OF CAREER DEVELOPMENT



A MODEL OF CAREER MATURITY IN ADOLESCENCE

(From Career Maturity Inventory by John O. Crites. Copyright © 1973 by McGraw-Hill, Inc. Quoted by permission of the publisher, CTB/McGraw-Hill, Del Monte Research Park, Monterey, CA 93940. All Rights Reserved. Printed in the U.S.A.) pg. 31.

APPENDIX M: TABLES

PART I: Statistical Tables

TABLE I — STARK 5th/6th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	69.33	+ 18.44	12.168	1.4866	.764
1975-1976	89.77		13.603	1.6619	
significant at the .05 level of confidence					

TABLE II — STRATFORD 5th/6th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	71.44	+ 13.00	17.63	4.155	.856
1975-1976	84.44		12.85	3.030	
significant at the .05 level of confidence					

TABLE III — GROVETON 5th/6th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	89.492	+ 3.851	12.168	1.4866	.764
1975-1976	93.343		13.603	1.6619	
significant at the .05 level of confidence					

TABLE IV STARK 6th/7th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	71.875	+ 6.00	16.331	5.77	.547
1975-1976	77.875		14.207	5.02	
no significance at the .05 level of confidence					

TABLE V STRATFORD 6th/7th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	94.70	+ 1.95	9.63	2.15	.695
1975-1976	92.75		14.89	3.33	
no significance at the .05 level of confidence					

TABLE VI GROVETON 6th/7th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	83.75	+ 5.68	13.09	1.97	.705
1975-1976	89.43		11.18	1.68	
significant at the .05 level of confidence					

TABLE VII STRATFORD 7th/8th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	78.867	+ 13.059	14.716	3.7996	.662
1975-1976	91.926		15.563	4.0184	
Significant at the .05 level of confidence					

TABLE VIII GROVETON 7th/8th

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	89.492	+ 3.851	12.168	1.4866	.764
1975-1976	93.343		13.603	1.6619	
significant at the .05 level of confidence					

TABLE IX UNION 5th/6th (Composite)

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	79.532	+ 11.312	14.652	1.6697	.763
1975-1976	90.844		11.364	1.2950	
significant at the .05 level of confidence					

TABLE X UNION 6th/7th (Composite)

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	85.366	+ 3.719	14.273	1.6939	.688
1975-1976	89.085		13.247	1.5721	
significant at the .05 level of confidence					

TABLE XI UNION 7th/8th (Composite)

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	87.253	+ 5.843	13.403	1.4711	.758
1975-1976	93.096		13.716	1.5056	
significant at the .05 level of confidence					

TABLE XII UNION 58 (Grades 5-8) Overall

	Mean	Difference	Standard Deviation	Standard Error	Correlation
1974-1975	84.50	+ 5.59	14.3456	----	-----
1975-1976	91.09		12.7181	----	
significant at the .05 level of confidence					

TABLE XIII COMPARISON OF GROUP TEST SCORES

Grade	March 1975	Grade	January 1976	Difference	Combined Mean Score
5th	79.05	5th	89.03	+ 9.98	87.48
6th	85.79	6th	89.03	+ 3.24	87.48
7th	86.26	7th	87.83	+ 1.57	87.01
8th	90.16	8th	92.29	+ 2.13	91.25

COMPARISON OF BASIC DATA FOR CAI

TABLE XIV (Instrument Norm Sample and Union 58 6th Grade

	Instrument Sample	Union 58 1974-1975	Union 58 1975-1976
Possible TOTAL SCORE	125	125	125
Median	71.50	85.00	91.00
Mean	69.60	85.79	89.03
σ	12.00	13.94	11.36
N	120	76	83

PART II: Intervening Activities Tables

TABLE I STARK 5th/6th

1974-1975 (5th Grade)	1975-1976 (6th Grade)
Career Lessons 1. Energy Occupations 2. Furniture Factory Occupations Field Trips 1. Moore Dam 2. Ethan Allen Furniture Factory	Career Lessons 1. Colonial Jobs 2. Fruit Occupations 3. Manufacturing Occupations 4. Mining Occupations 5. Farming Occupations

Test conditions: March 1975 Stark Town Hall (cold) - tested by the Level I Evaluator

January 1976 Classroom testing by the Level I Evaluator

September 1975 - January 1976: new grades 4-6 teacher

TABLE II STRATFORD 5th/6th

1974-1975 (5th Grade)	1975-1976 (6th Grade)
Career Lessons 1. Colonial Occupations	Career Lessons 1. Archaeologist 2. Clowns 3. Forestry 4. Sawmill/Logging Occupations 5. Business Occupations 6. Bakers 7. Librarian 8. Newspaper Occupations 9. Cake Decorating 10. Politics Field Trips 1. Water-powered sawmill 2. Newspaper office Guest Speakers 1. Governor of NH

Test conditions: March 1975 Classroom testing by teachers

January 1976 Large group testing (5th and 6th grades together) by the Level I Evaluator

TABLE III GROVETON 5th/6th

1974-1975 (5th Grade)	1975-1976 (6th Grade)
Career Lessons 1. Values in Occupations 2. Career Exploration 3. Food Service Occupations 4. Colonial Occupations 5. Game Management 6. Forestry	Career Lessons 1. Money and Occupations 2. Advertising Occupations 3. Auctioneer 4. Mass Media 5. Newspaper Occupations 6. Auto Mechanics
Bread and Butterflies films 1. Work Means 2. I Agree, You're Wrong 3. Me, Myself, Maybe	Bread and Butterflies films 1. People Need People 2. Power Play 3. The Way We Live
Field Trips 1. Appalachian Mt. Club 2. Mill Brook - forest site 3. Groveton Cafeteria 4. Lonesome Lake - National Forest	Field Trips 1. Coos County Democrat (newspaper)
Guest Speakers 1. Nurse	Guest Speakers 1. Auto Mechanic

Test conditions: March 1975 Classroom testing by teachers

January 1976 Classroom testing by teachers

September 1975-January 1976: New 6th grade science teacher

TABLE IV STARK 6th/7th

1974-1975 (6th Grade)	1975-1976 (7th Grade)
Career Lessons 1. Energy Occupations 2. Furniture Factory Occupations	NO project related intervening activities
Field Trips 1. Moore Dam 2. Ethan Allen Furniture Factory	

Test conditions: March 1975 Stark Town Hall (cold) testing by the Level I Evaluator

January 1976 Groveton High School; new teacher and a new environment, 2 large groups: gym testing by the guidance counselor and study hall testing by the Level I Evaluator (crowded and noisy)

TABLE V STRATFORD 6th/7th

1974-1975 (6th Grade)	1975-1976 (7th Grade)
Career Lessons 1. Soil Conservation Occupations 2. Dietitian 3. Sports Reporting	NO project related intervening activities

Testing conditions: March 1975 Classroom testing by teachers

January 1976 Large group testing (7th and 8th grades together) by the Level I Evaluator

TABLE VI GROVETON 6th/7th

1974-1975 (6th Grade)	1975-1976 (7th Grade)
Career Lessons 1. Career Exploration 2. Assembly Line Production 3. News Media 4. Machines Occupations 5. Space Technology Occupations Bread and Butterflies films 1. Work Means 2. I Agree, You're Wrong 3. Success Story 4. Things, Ideas, People Field Trips 1. Fairbanks Museum 2. Appalachian Mt. Club Workshops 1. Snowshoe skills Guest Speaker 1. Dietitian	NO project related intervening activities

Test conditions: March 1975 Classroom testing by teachers

January 1976 Groveton High School; new teachers and a new environment, 2 large groups: gym testing by the guidance counselor and study hall testing by the Level I Evaluator (crowded and noisy)

TABLE VII STRATFORD 7th/8th

1974-1975 (7th Grade)	1975-1976 (8th Grade)
Guest Speakers 1. Snowmobile Assembly Workshops 1. Snowshoe skills Mini Courses 1. Outdoor Materials Construction	Guest Speakers 1. Physical Therapist

Test conditions: March 1975 Classroom testing by teachers

January 1976 Large group testing (7th and 8th grades together) by the Level I Evaluator

TABLE VIII GROVETON 7th/8th

1974-1975 (7th Grade)	1975-1976 (8th Grade)
NO project related intervening activities	NO project related intervening activities

Test conditions: March 1975 Large group testing by the guidance counselor

January 1976 Two large groups: gym testing by the guidance counselor and study hall testing by the Level I Evaluator (crowded and noisy)

TABLE IX UNION 5th/6th (Composite)

1974-1975 (5th Grade)	1975-1976 (6th Grade)
Career Lessons (9) Field Trips (6) Guest Speakers (1) Bread and Butterflies film (3)	Career Lessons (21) Field Trips (3) Guest Speakers (2) Bread and Butterflies films (3)

TABLE X UNION 6th/7th (Composite)

1974-1975 (6th Grade)	1975-1976 (7th Grade)
Career Lessons (10) Field Trips (2) Guest Speakers (1) Bread and Butterflies (4) films Workshops (1)	NO project related intervening activities

TABLE XI UNION 7th/8th (Composite)

1974-1975 (7th Grade)	1975-1976 (8th Grade)
Guest Speakers (1) Workshops (1) Mini Courses (1)	Guest Speakers (1)

TABLE XII UNION 58 (grades 5-8) OVERALL

1974-1975	1975-1976
Career Lessons (19)	Career Lessons (21)
Field Trips (8)	Field Trips (3)
Guest Speakers (3)	Guest Speakers (2)
Bread and Butterflies (7) films	Bread and Butterflies (3) films
Workshops (1)	Workshops (0)
Mini Courses (1)	Mini Courses (0)

APPENDIX N: COST ANALYSIS

IN-SERVICE TRAINING/PROGRAM DEVELOPMENT

DATE	# of Teachers Involved	Activity Costs	Average Cost per Teacher
July 1973	4	$500.00 (5 days)	$ 125.00
November 1973	60	None (After School, State Consultants)	0
January 1974	12	None (after school, State Consultants)	0
July 1974	3	$1,125.00 (15 days)	375.00
Sept. 1974 - June 1975	22	None (64 lessons development on a day-to-day, on-going basis)	0
October 1974	26	None (release time 2:00 pm - 4:00 pm)	0
November 1974	21	$50.00 (for Consultant and materials)	2.38
January 1975	14	None (after school)	0
July 1975	4	$1,000.00 (10 days)	250.00
Sept. 1975 - Dec. 31, 1975	12	None (16 lessons in health and business/ office cluster areas developed for grades 7-12 on an on-going basis)	0
October 1975	10	None (after school)	0

MINI COURSES[1] (for students in grades 9-12)

DATE	# of COURSES	# of Students Involved	ACTIVITY COSTS	AVERAGE COST PER STUDENT
1973-1974 School Year	4	32	$ 1,968.82	$ 61.53
1974-1975 School Year	11	98	$ 5,821.18	$ 59.40
1975-1976 School Year (September - Dec. 1975	4	45	$ 2,420.00	$ 53.77

MINI COURSES OFFERED

1973-1974	1974-1975	1975-1976
.Child Care: Growth and Development I & II	.Architectural Drawing I & II	.Introduction to the Building Trades
.Small Engine Repair	.Surveying I & II	.Small Engine Repair I & II
.Needlepoint and Crocheting	.Introduction to the Building Trades	.Fly-tying
	.Fly-tying	.Cake Decorating
	.Crocheting	
	.Outdoor Camping Equipment	
	.Cake Decorating	

[1] Ten week long elective courses related to career clusters - taught both in-school and outdoors by Union 58 staff members and community resource people.

WORKSITES[2] (for students in grades 10-12)			
DATE	# of Students Involved	ACTIVITY COST	AVERAGE COST PER STUDENT
1973-1974 School Year	20	$450.00 (paid to sites for services use)	$ 22.50
1974-1975 School Year	29	$ 150.00	$ 5.17
1975-1976 School Year (Sept. 1975 - Dec. 1975	20	-0-	-----

COMMUNITY RESOURCE WORKSITES

Bank
Dentist
Ford Tractor Garage
Groveton Elementary School
Groveton Papers (wood division)
Groveton Plumbing and Heating
Gun Repair Shop
Hampton Equipment Company (Stihl Chainsaws)
House Construction Site (11th-12th grade student project)
Kent Nursing Home
Manchester Manufacturing
North Country Motors
Physical Therapist
Roberts Motors
Sister's Beauty Salon
Tri-County Homes
Upper Connecticut Valley Hospital
Vershire School
White Mountain Mack
Weeks Memorial Hospital

[2] Community resource facilities that were utilized for student skills development and on-the-job training in a wide variety of occupations. At each worksite, an employee of the site functioned as a worksite supervisor and was directly involved in working with the student and evaluating his/her performance.

FIELD TRIPS[3] (K-12)

DATE	# of Trips	# of Students Involved	ACTIVITY COSTS	AVERAGE COST PER STUDENT
1973-1974 School Year	3	76	$ 32.80	$ 0.43
1974-1975 School Year	20	409	$ 437.80	$ 1.07
1975-1976 School Year (Sept. - Dec. 1975)	14	332	$ 163.00	$ 0.49

FIELD TRIP SITES

.Local garages and gas stations
.Laundramat
.Local Restaurants
.Post Office
.Schools
.Supermarkets
.Printing Press
.Local Newspapers
.Libraries
.Farms/dairies
.Ethan Allen Factory
.Fire Stations
.Local Airports
.Mills/Factories
.Hospitals
.Jails
.Courts
.Museums/Planatariums
.Water Powered Saw Mill
.Paper Mill Experimental Forest Lands
.Local/Area Recreational Centers

[3] Students (K-12) were taken out into the natural and social environment(s) of their communities for purposes of exposure, knowledge acquisition, and skills development. Employees at community resource sites acted as field trip guides and community people acted as chaperones.

GUEST SPEAKERS[4] (K-12)				
DATE	#of GUEST SPEAKERS	# of STUDENTS INVOLVED	ACTIVITY COSTS	AVERAGE COST PER STUDENT
1973-1974 School Year	0	----	-----	------
1974-1975 School Year	25	629	0	0
1975-1976 School Year (Sept. - Dec. 1975)	12	135	0	0

GUEST SPEAKERS

- .Plumber
- .Fireman
- .Animal Biologist
- .Nurse(s)
- .Forester
- .Fish & Game Officer
- .Data Processes
- .Dietician(s)
- .Banker
- .Police Officer
- .Treasury Department Agent
- .Surveyor
- .Legislator
- .Soil Scientist
- .AMC (Conservationist)
- .Newspaper Reporter
- .Pharmacist
- .Cafeteria Supervisor
- .Soil Conservation Officer
- .Federal Bureau of Investigation
- .Pilot
- .Teacher
- .Physical Therapist

[4] Community resource people who volunteered their time and services - to visit classrooms and discuss/demonstrate their jobs to K-12 students.

TEACHER VISITATION[5]

DATE	# of VISITATIONS	# of TEACHERS INVOLVED	ACTIVITY COSTS	AVERAGE COST PER TEACHER
1973-1974 School Year	0	----	-----	-----
1974-1975 School Year	0	----	-----	-----
1975-1976 School Year (Sept. - Dec. 1975)	2	4	$ 100.00	$ 25.00

[5] During the course of the school day, teachers were released to attend meetings, to gain exposure to materials, and to visit other classrooms - teachers - programs.

INSTRUCTIONAL MATERIALS COSTS[6]		
1973-1974	1974-1975	1975-1976
$ 1,005.49	$ 996.10	$ 873.74

[6] Materials costs for Kindergarten through grade six. Instructional materials for grades 7-12 are included under mini courses (Appendix N).

Instructional materials are identified herein as films, filmstrips, books, games, cassettes/records, slides, flashcards, hand puppets, etc.

TESTING[7]				
Test Item	Activity	March 1975	January 1976	Total Costs
Career Awareness Inventory (CAI)	Testing	$ 311.50[a]	$ 64.00[b]	$ 375.50
	Scoring	$ 48.00	$ 59.40	$ 107.40
Career Maturity Inventory (CMI)	Testing	$ 166.00[c]	-----	$ 166.00
	Scoring	$ 101.50	-----	$ 101.50

[a] CAI test booklets, manuals, answer sheets and keys

[b] CAI answer sheets only

[c] CMI test booklets, manuals, answer sheets and keys

[7] In March 1975, both the Career Awareness Inventory (CAI) and the Career Maturity Inventory (CMI) were administered to students in grades 5-8. Only the CAI scores were used as pre-test data for purposes of this study. The CAI post-test was administered to grades 5-8 students in January 1976.

In both the pre- and post-test situations, the CAI was hand scored - although machine socring was avilable at an additional cost. The CMI test was machine scored.

During the course of the 1973-1974 school year, a total of 118 students (grades 7-12) were tested using the Strong Vocational Interest Blank and the Kuder Performance Inventory.

In 1974-1975, a total of 533 students (grades 5-8) were tested using the Career Awareness Inventory (346) and the Career Maturity Inventory (187).

In January 1976, a total of 369 students (grades 5-8) were tested using the Career Awareness Inventory (CAI).

OVERALL COST PER STUDENT (K-12)[8]			
ITEM	1973-1974	1974-1975	1975-1976 (Sept. - Dec.)
Teacher In-Service Workshops (training)	$ 500.00	$ 1,175.00	$ 1,000.00
Mini Courses	$ 1,968.82	$ 5,821.18	$ 2,420.00
Worksites	$ 450.00	$ 150.00	$ -----
Instructional Materials (K-6)	$ 1,005.49	$ 996.10	$ 873.74
Field Trips	$ 32.80	$ 437.80	$ 163.00
Guest Speakers	$ ----	$ ----	$ -----
Testing/Scoring (CAI & CMI only)	$ ----	$ 627.00	$ 123.40
Teacher Visitations	$ ----	$ ----	$ 100.00
TOTAL COSTS	$ 3,957.11	$ 9,207.08	$ 4,680.14
NUMBER OF STUDENTS	414[a]	809[b]	897[c]
COST PER STUDENT	$ 9.56	$ 11.38	$ 5.22

[8] The Overall Cost Per Student is based upon the total number of students (K-6 and 7-12) who had been involved in program-related activities; i.e., classroom lessons, use of instructional materials, field trips, guest speakers, mini courses, worksites, seminars, and testing-plus teacher in-service workshop and visitation costs.

[a] 414 students engaged in career awareness activities.

[b] 618 students engaged in career awareness activities (including grades 5-6 testing) and 191 students (grades 7-8) were involved in testing.

[c] 711 students engaged in career awareness activities (including grades 5-6 testing) and 186 students (grades 7-8) were involved in testing.